

WHAT IS CLAIMED IS:

1. An image forming process for forming an image-recorded article having a coating layer on at least a part of an image formed, which comprises the  
5 steps of

providing a liquid composition containing a polymer,

providing an image-recorded article formed on a recording medium by an ink-jet recording method, and

10 applying the liquid composition to at least a part of an image of the recorded article to insolubilize the polymer contained in the liquid composition on the surface of the image, thereby forming the coating layer at a position to which the  
15 liquid composition has been applied,

wherein the recording medium has a surface which insolubilizes the polymer.

2. The image forming process according to claim  
20 1, wherein the polymer has a structure represented by -COOA (1), wherein A is an alkali metal, ammonium or an organic ammonium, and the surface pH of the recording medium is a pH which insolubilizes the polymer.

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3. The image forming process according to claim

1, wherein the polymer has a structure represented by  
-COOA (1), wherein A is an alkali metal, ammonium or  
an organic ammonium, and the recording medium  
contains a polyvalent metal ion which insolubilizes  
5 the polymer.

4. The image forming process according to any  
one of claims 1 to 3, wherein the polymer is a vinyl  
copolymer containing a unit composed of an acrylic  
10 monomer.

5. The image forming process according to any  
one of claims 1 to 3, wherein the polymer contains a  
unit composed of a monomer having ultraviolet  
15 absorbency.

6. The image forming process according to any  
one of claims 1 to 3, wherein the liquid composition  
contains a surfactant having ethylene oxide.  
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7. The image forming process according to claim  
2, wherein the recording medium has a porous ink-  
receiving layer, and the surface pH thereof is within  
a range of from 5.4 to 7.0.  
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8. The image forming process according to claim

7, wherein the recording medium has a porous ink-receiving layer containing an alumina hydrate.

9. The image forming process according to claim 3, wherein the recording medium has a porous ink-receiving layer, and the ink-receiving layer contains any ion selected from the group consisting of an alkaline earth metal ion, a rare earth metal ion and a zirconium ion.

10. The image forming process according to any one of claims 1 to 3, wherein an absorption coefficient,  $K_a$  from 0.025 seconds to 0.1 seconds in the Bristow method of the liquid composition into the recording medium is within a range of from 0.5 to 1.5 ( $\text{ml} \cdot \text{m}^{-2} \cdot \text{msec}^{-1/2}$ ).

11. The image forming process according to any one of claims 1 to 3, wherein the liquid composition contains at least two water-soluble polymers.

12. An image forming process for forming an image-recorded article having a coating layer on an image formed, which comprises the steps of providing a liquid composition containing an aqueous medium and a polymer having a structure

represented by a general formula

-COOA ... (1)

wherein A is an alkali metal, ammonium or an organic ammonium,

5        providing an image-recorded article formed on a recording medium having a surface pH which insolubilizes the polymer by an ink-jet recording method, and

10        applying the liquid composition to the image-recorded article to form the coating layer on the image-recorded article.

13. The image forming process according to claim 12, wherein the recording medium has a porous  
15    ink-receiving layer, and the surface pH of the ink-receiving layer is within a range of from 5.4 to 7.0.

14. An image forming process for forming an image-recorded article having a coating layer on an  
20    image formed, which comprises the steps of

      providing a liquid composition containing an aqueous medium and a polymer having a structure represented by a general formula

-COOA ... (1)

25    wherein A is an alkali metal, ammonium or an organic ammonium,

providing an image-recorded article formed on a recording medium containing a polyvalent metal ion which insolubilizes the polymer by an ink-jet recording method, and

5       applying the liquid composition to the image-recorded article to form the coating layer on the image-recorded article.

15. The image forming process according to  
10       claim 14, wherein the recording medium has a porous ink-receiving layer, and the ink-receiving layer contains a polyvalent metal ion.

16. A liquid composition for forming a coating  
15       layer on at least a part of an image-recorded article formed on a recording medium by an ink-jet recording method, which comprises an aqueous medium and a polymer having a structure represented by a general formula

20        $\text{-COOA} \cdots (1)$

wherein A is an alkali metal, ammonium or an organic ammonium,

wherein the polymer is dissolved in the aqueous medium in such a state as to be insolubilized by the  
25       surface pH of the recording medium.

17. A liquid composition for forming a coating layer on at least a part of an image-recorded article formed on a recording medium by an ink-jet recording method, which comprises an aqueous medium and a  
5 polymer having a structure represented by a general formula



wherein A is an alkali metal, ammonium or an organic ammonium,

10 wherein the polymer is dissolved in the aqueous medium in such a state as to be insolubilized by a polyvalent metal ion contained in the recording medium.

15 18. An ink-jet recording apparatus comprising a liquid holding part for holding a liquid therein and a liquid ejecting part for ejecting the liquid fed from the liquid holding part, wherein the liquid is the liquid composition according to claim 16 or 17.

20 19. An image-recorded article obtained by the image forming process according to any one of claims 1, 12 and 14.

25 20. The image-recorded article according to claim 19, wherein the coating layer formed on the

image further comprises a layer containing a polymer impregnated into the surface layer of the image and insolubilized.